# INCREASING PHYSICAL ACTIVITY INTENT IN THE 50 AND OLDER POPULATION

by

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As members of the DNP Project Committee, we certify that we have read the DNP project prepared by Victoria Catherine Weirick, titled Increasing Physical Activity Intent in the 50 and Older Population and recommend that it be accepted as fulfilling the DNP project requirement for the Degree of Doctor of Nursing Practice.

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Final approval and acceptance of this DNP project is contingent upon the candidate's submission of the final copies of the DNP project to the Graduate College.

I hereby certify that I have read this DNP project prepared under my direction and recommend that it be accepted as fulfilling the DNP project requirement.

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# DEDICATION

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## ABSTRACT

**Background:** Older adults are living longer, developing more physical disabilities, and are spending a significant amount of money on chronic preventable conditions. Applying a moderate to vigorous physical activity (PA) regimen of at least 150 minutes a week can prevent certain chronic conditions, improve or prevent declining physical abilities, and lead the older adult to live a more satisfying life.

Implementing a new regimen is difficult, and practitioners can assist by providing older adults education regarding the benefits of physical activity, national recommendation of PA for the older adult, and resources for application of PA in the home and community. The Health Belief Model (HBM) was used as a guide to identify the common variables of human behaviors, which can be altered to create positive health outcomes for an individual.

**Objective:** The purpose of this DNP project was to increase the intent of the older adult individuals at the Abundant Health Family Practice to meet the Centers for Disease Control and Prevention moderate intensity PA recommendations of 150 minutes per week, through the theoretical framework of the Health Belief Model and educational interventions.

**Design:** Two-group post-test quality improvement project

**Setting:** Abundant Health Family Practice. October 1, 2019 – October 8, 2019.

**Participants:** Older adults over the age of 50 who had a preexisting scheduled primary care appointment.

**Measurements:** Participants were surveyed after their primary care scheduled appointment. General background, demographic data, and data-on participants current PA practices and future PA practices was collected. Descriptive statistics were used to analyze the data.

**Findings:** There were 20 participants who started and completed the post-survey. Ten were included in the standard appointment group and 10 were a part of the PA education group. The demographics were similarly distributed between both groups. The PA education group had 20% higher scores on the Likert scale when asked if they intended to increase weekly PA. The average mean answer was also higher in the PA group when the participant was asked about belief on importance of exercise, barrier to benefits, and self-efficacy.

## INTRODUCTION

Non-hospitalized older adults over 50 years of age spend $860 billion dollars a year on their healthcare. Four out of every five of the costliest chronic diseases, in this age group, can be managed or prevented with physical activity (PA) (Centers for Disease Control and Prevention [CDC], 2019). Americans are now able to live longer in part due to advances in medical science; but they are also developing more physical disabilities. While there is a wide range of classifications defining the older adult, this project defines an older adult as a person over the age of 50, as proposed by the CDC (2019).

Some 38% of patients over the age of 65 have a preventable physical disability with an increase to 74% for patients over 80 years of age (CDC, 2013). In 2014, 14.5% (46.3 million) of the US population was aged 65 or older and is projected to reach 23.5% (98 million) by 2060 (Colby & Ortman, 2014). PA reduces the risk of cardiovascular disease, type 2 diabetes, osteoporosis, falls, hip fractures, certain types of cancers, all-cause mortality, (Kendrick et al., 2018) and improves mental health, all of which lead to a more satisfying life for older adults (Griffiths et al., 2014). Even though PA is a widely accepted healthy behavior, only 24% of older adults over the age of 60 years met the national guideline for PA recommendations (Galli et al., 2018). According to the CDC (2019) 150 minutes of moderate-to-vigorous physical activity (MVPA) per week is recommended. MVPA is defined by the AHA (2019) as PA that can be performed while talking but also increases heart rate and respiration rate.

There have been attempts by the US government and insurance companies to promote exercise on a national scale by implementing programs such as Silver Sneakers, Step it Up!, Nifty after Fifty, and Go4Life, but programs such as these are not adopted by many older adults.

Efforts to motivate patients to attain the recommended amount of weekly MVPA is lacking at the primary care level (Caroll et al., 2008).

## Background Knowledge

A treatment adherence of 150 minutes of MVPA per week helps prevent disabilities and improves patients' satisfaction with their lives (CDC, 2019). Older adults over 65 years of age often do not meet CDC recommendations of MVPA due to many perceived barriers such as lack of time, decline in health, fear of injury, access to facilities and equipment, cost, self-discipline, and lack of PA education leading to fears of embarrassment or slowing others down (Costello, Kafchinski, Vrazel, & Sullivan, 2011). Although barriers exist, groups such as the CDC, National Institute on Aging (NIA), and various senior PA programs are aware of the well-researched barriers and have implemented PA plans accounting for and often eliminating possible barriers for the older adult population.

Primary care providers furnishing patient education and explaining the importance of PA are essential to an improvement in the patient's commitment to integrating PA into the older adult's lifestyle. Gold and McClug (2006) reported that the combination of oral and printed education, given during routine visits in the family practice setting, significantly increase patient treatment compliance. Caroll et al. (2008) found physicians spoke about PA in less than 33% of appointments, and very few recommendations and community resources were given with no clear indication as to why the percentage was so low. It is not uncommon for a medical office to schedule a 20-minute appointment per patient. With each patient appointment, a practitioner must discuss the chief complaint, reach a diagnosis, and chart the findings, causing the inclusion of PA education, of more than a few minutes, to be dependent on these time limitations. If PA

education can be concise enough to be included into a 20-minute visit, then practitioners are more likely to include PA education. Successful primary care interventions require minimal time from the provider, easy access, clear concise and generalizable information, and a list of resources included where the patient can obtain further information (Marcus, 2014). Using resources, which have been created by dependable institutions, such as the CDC and NIA, provides the practitioner with trustable quick materials that can be preprinted and accessible at patient visits.

## Local Problem

According to Arizona Department of Health Services (2014), the number of Arizonans, age 65 and older, is expected to increase 174% from 883,014 in 2010 to 2,422,186 in 2050. The older adult population in Arizona is unique. There is an influx of older adults who temporarily live in Tucson seasonally, during the winter months. There is also a shortage of medical professionals year-round, especially in the winter months, leading to a decrease in patient access to providers, increase in wait times for appointments and possibly, less face time with a practitioner. In addition to the population concerns, areas surrounding Tucson such as Oro Valley and Marana are traditional retirement communities with large older adult populations but limited PA resources such as senior centers and recreational areas (ASCA, 2019). Additionally, Tucson summers are hot, averaging 100°F+, preventing older adults from outdoor PA, such as walking, use of recreational areas parks, pools, and hiking trails. When Tucson practitioners are knowledgeable of the local challenges confronting the resident older adult population, they have an enhanced opportunity to provide applicable PA education as a vehicle for improved patient intent to comply with the recommended 150 minutes of MVPA a week.

## Purpose

The purpose of this DNP project was to increase patients' intent to comply with the CDC's MVPA of 150 minutes a week by increasing knowledge of the medical benefits of PA, decreasing perceived barriers to PA, and informing patients of community PA resources available to older adult patient population at a family practice center in the Northwest of Tucson, AZ. The project purpose and aims were accomplished by providing a brief focused PA educational intervention and written resources during regularly scheduled wellness and episodic patient visits.

Many older adults have both regular appointments in the primary care office including yearly wellness visits and episodic visits related to illness or injury. During these encounters, patients are more open to learning about their health and adopting positive healthy lifestyle behavioral changes, due to the trust they have in their primary care provider (Jones, Carson, Bleich, & Cooper, 2012). Primary care appointments provide an opportune time to educate older adults on the CDC recommendations of MVPA and the positive impact MVPA has on the older adult. Success was measured by patients increasing intent to exercise hoping to ultimately lead older adults to increasing their MVPA.

## Study Question

Does a brief focused PA educational intervention with written resources change the intent to exercise in an older adult population at a primary care practice?

## Aims

The first project aim was to increase the intent of older adult patients, seen at the Abundant Health Family Practice, to comply with the MVPA recommendation of 150 minutes of

PA per week. Directly after a primary care visit, the older adult patients received information regarding the weekly PA recommendations published by the CDC. In addition, the project director provided an explanation of the benefits of increased PA and the resources available to perform such activities. By giving older adults more exposure and information about PA, it was the hope that intent increased due to the perceived benefits. The second project aim was to build a replicable, inexpensive, and informational educational tool able to effectively communicate to the older adult within a 20-minute appointment. By compiling then presenting summarized, organized, and straightforward materials from trusted international/national healthcare institutions and local resources the project contained all the elements needed to reach the second aim.

## Theoretical Framework

The Health Belief Model (HBM) provides a strong framework for understanding change in patient health related behaviors. The HBM is constructed of several modifying variables, which affect a patient's belief regarding health-related decision-making. The HBM was developed in the 1950s to better understand the widespread failure of health screening programs to improve patient preventative behaviors (Martin, Haskard-Zolnierek, & DiMatteo, 2010). HBM underwent innovations including the addition of self-efficacy in the 1980s. The HBM has become one of the most popular models being used to create healthcare related educational tools because of its usefulness in creating short- and long-term behavior change strategies (Rimer & Glanz, 2005). The HBM supports the notion that individual health behaviors can be changed if an assessment is made of the patient's core constructs. The HBM's constructs are perceived

susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy (Rimer & Glanz, 2005).

## Concepts

Applying the HBM constructs to the older adult increases the chances of changing PA behaviors. Perceived susceptibility refers to an individual's concerns of vulnerability resulting from an adverse medical condition or complications from such a condition (Saunders, Frederick, Silverman, & Papesh, 2013). Perceived severity is the belief in the degree of medical and social consequences the patient anticipates experiencing due to the condition. Perceived benefits are the patient's personal notions of positive benefits from condition-based interventions, and perceived barriers are the difficulties the patient believes that will be necessary to overcome before effectively participating in an intervention (Saunders et al., 2013). Perceived self-efficacy relates to an individual's beliefs he or she will be able to perform the intervention. Cues to action pertain to the individual prompts to take action (Saunders et al., 2013). The prompts can be internal such as a realization of symptoms or external such as a healthcare education initiative (Saunders et al., 2013).

PA is typically recognized, by the general public, as a defining factor in achieving optimal health and preventing functional decline (Saunders et al., 2013). PA is perceived by older adults as having more barriers than health benefits. Four-hundred and nine randomly selected 65- to 85-year-old individuals cited pain, general disinterest, and accessibility as being the most significant barriers to increasing PA (Crombie et al., 2004). A meta-analysis found an increase in the patient's perceived benefit of PA and reduction of perceived barriers to PA were the variables, which most reliably predicted for positive health behaviors (Carpenter, 2010).

Individuals who perceive more benefits than barriers are more likely to take action thus making perceived benefits and barriers the most influential variables of the HBM (Iranagh, Rahman, & Motalebi, 2016).

Easom (2003) concluded patient's self-efficacy was an important positive influence of increased healthy behaviors. Easom goes on to state that by decreasing barriers and increasing benefits, patient's self-efficacy can be improved. Utilizing Easom's findings, patient self-efficacy could be improved by applying the HBM educational tool, resulting in increased perceived benefits and decreased perceived barriers to PA. Application of the HBM model was predicted to bolster the patient's intention to increase PA, a goal of this DNP project. In order to determine if the DNP project's educational tools increased perceived benefits and decreased perceived barriers thus increasing self-efficacy, participants were asked to fill out the post survey based on the three HBM constructs benefits, barriers, and self-efficacy. The cue to action was the PA educational tools included in the DNP project.

The older adult participants were divided into two groups, one receiving the PA education (PA education group), and the other receiving their regularly scheduled appointment (standard appointment group). Both groups received their unaltered scheduled appointment with their primary care provider. The PA Education group attended their primary care scheduled appointment and received the DNP project intervention while the standard appointment group had only a primary care scheduled appointment with no PA educational intervention. Post surveys were handed out after each participating older adult patient's appointment. Each participant was asked to answer questions about the three HBM constructs of focus, which are: perceived benefits, perceived barriers, and self-efficacy. Measuring the mean difference between

the groups PA educational group and standard appointment group in the categories of self-efficacy, perceived benefits, intent to exercise, and a decrease in barriers, was how project effect was measured. Educational material specifically addressing perceived benefits (i.e., "Increasing PA leads to increased ease of activities of daily living and improved quality of life…") and ways to overcome barriers, (i.e., "Modified physical activity options for individuals with limited access to facilities include…") was used. Home exercise plans were provided to the individuals to take with them, including strength, endurance, balance, and flexibility PA.

## Synthesis of Evidence

The CDC has recommended regular PA for the older adults over 50 years, citing the benefits of increased physical functioning, prevention/management of chronic illnesses, and overall mental health. Even though the CDC, NIA, and World Health Organization (WHO) all advocate for increasing PA in the older adult population, the information is primarily web-based and not frequently dispersed during primary care appointments. It is essential for primary care providers to incorporate PA guidelines in appointments especially due to the large proportion of the older adult population having one or more disabilities that would benefit from an increase in PA (Sanchez, Silvestre, Campo, & Grandes, 2018). Research shows with an increase in primary care general education, patients' outcomes improve (Sanchez, Silvestre, Campo, & Grandes, 2018).

PubMed and CINAHL databases were used to perform literature searches to evaluate the current research on PA educational interventions in the primary care setting with the older adult population. The literature searches were limited to the past five years (2014 through 2019), human subjects only, English, and full article available. On PubMed, the MeSH terms, which

were used included: “Physical Activity” OR “Exercise,” “Education” OR “Advice,” “Primary Care” OR “Family Medicine” OR “General Practice,” and “Older Adult” OR “Elderly.” The search generated one unrelated article.

A CINAHL search, using the same terms, generated one relevant and one nonrelevant article. MeSH terms were changed to “Physical Activity” OR “Exercise,” “Education” OR “Advice,” “Interventions,” and “Older Adult” OR “Elderly.” This search produced 31 articles, with one relevant article. The search was expanded to the last 10 years with 54 articles retrieved, three of which were relevant. The same search in CINAHL produced 43 results and two were applicable. The MeSH terms were broadened to “primary care” OR “family practice,” and “education,” and “patients.” PubMed yielded 86 results and three that were applicable. CINAHL produced 41 results and two were applicable.

Next, the MeSH terms “health belief model,” and “physical activity,” and “older adult,” were also searched in the databases, and PubMed produced 17 articles with one being relevant and CINHAL produced 20 and one new relevant article. In addition to database searching, hand searching of the articles’ reference lists was done. Some 155 articles were retrieved. Of those 155, 11 were relevant and synthesized. Reviewed articles are located in the table located in Appendix A.

**Primary Care/Clinician Based Education Interventions**

Quality support from multiple studies revealed clinician-based education has a positive effect on patient behaviors. There are various studies supporting patient benefits in related education interventions. Nunez, Keller and Ananian (2009) and Gamboa Moreno et al. (2019) concluded that self-management programs, discussed and promoted by the primary care team,

were a useful tool to use and promoting self-management practices in the older adult population. Ferguson, Swan, and Smaldone (2015) found providing patients education and physical educational resources, patients were better able to apply lifestyle modifications to manage chronic conditions such as diabetes.

Primary care provider engagement and education is found to be influential in getting adults to increase exercise habits (Goodyear-Smith, McPhee, Duncan, & Schofield, 2014). Provider educational interventions have also proved to be effective in other areas such as depression management and hearing loss. In a systematic review, Pederson et al. (2018) found patients were more likely to adhere to recommended patient guidelines if depression education was delivered by providers. Using a clear and fundamental general hearing loss brochure, Walhagen (2017) reported a modest improvement in patient health education and understanding of the content. PA was also increased in populations who were educated in the primary care setting, accentuating the need for providers to educate patients regarding daily lifestyle changes to improve overall health (Beighton, 2015; Caroll et al., 2008).

**Patient Education Directed by Health Beliefs**

The HBM has guided many studies in patient education, evaluating the most important factors to address in an intervention. Shao, Wang, Liu, Tian, and Li (2018), used the HBM as their basis for PA promotion using the core variables of perceived susceptibility, perceived severity, perceived benefit, perceived barriers, and self-efficacy. They found PA was significantly improved after patients had been educated by a primary care practitioner. Motivation and self-efficacy have been found to be the two most significant factors determining PA levels in older adults (Notthoff, Reisch, & Gerstorf, 2017). If a patient does not have

motivation or believes he or she is limited physically then there is a greater probability of a patient not participating in PA (Notthoff, Reisch, & Gerstorf, 2017). Research indicates the likelihood of PA increases if there is a coexisting increase in motivation and self-efficacy. Notthoff, Reisch, and Gerstorf (2017) and Bethancourt, Rosenberg, Beatty, and Arterburn, (2014) both determined the barriers the older adult population faces when attempting to increase their PA. Barriers included physical limitations, lack of PA education, and lack of professional guidance.

## Strengths

Recognized strengths of the articles reviewed include the presence of primary care/clinicians providing education or interventions during appointments to increase knowledge/compliance with health benefiting recommendations**.** Applying the HBM to evaluate the most important factors when trying to increase patient PA hours has been adequately researched using systemic review and randomized control trials. Many of the studies included adequate sample sizes with appropriate exclusion and inclusion criteria.

## Limitations and Weaknesses

Limitations found in the research included the lack of long-term duration of the effect of primary care/clinician-based PA education. Many studies were short term, less than a few weeks. Vague terms and language were used in surveys possibly adding to inaccuracies. Furthermore, there were no studied physical modification exercise suggestions and no regionally based PA lists provided to assist with the aging adults' barriers to increasing PA. There was also no research found on the topic of when practitioners are more likely to educate patients on PA. There were no found variables, which made the inclusion of PA as a part of the standard office

visit. There were also noticeable weaknesses pertaining to the specifics of this DNP project, such as few studies focusing on the success of national sponsored PA initiatives, and few focused on brief educational interventions given within appointments.

### Literature Gaps

There is limited available research on the effectiveness of primary care/clinician-based PA education, especially in the past 10 years. There were no identified studies found on the effectiveness or prevalence of primary care/clinician-based PA education in the older adult. This DNP project incorporated PA in the older adult population by encouraging them to include PA in their daily routines through education on benefits, eliminating barriers, and encouraging CDC physical recommendations during routine exams with primary care practitioners.

## METHODS

### Design

This DNP quality improvement project incorporated a two-group post-test quasi-experimental design to determine the effects of a PA educational intervention in patients, over the age of 50, within a Tucson, AZ primary care office. Patients scheduled for routine appointments received either a typical appointment (standard appointment group) or typical appointment with the PA education intervention (PA education group). A post-survey was given to both groups regarding perceived benefits, perceived barriers and self-efficacy related to PA and intent to meet the CDC's MVPA of 150 minutes a week. The groups' answers were compared. Convenience sampling was utilized to generate the project participants from patients who came to the clinic for preexisting appointments. The project was submitted to the University of Arizona Institutional Review Board (IRB) for approval (Appendix B), to ensure the protection

and welfare of the participants. The primary care office also provided approval for completion of the project at the site (Appendix C).

## Setting

The average patient to primary care provider ratio for urban areas in the United States is 320:1 (NRHA, 2019), and in Marana, AZ, which is a rural neighboring town, the patient to primary care ratio is 1,519:1 (DataUSA, 2019). Thus, there is less accessibility for patients to see providers leading to longer wait times and less face-to-face time. Patient education needs to be succinct and able to be delivered quickly and effectively to the patient within a 20 minute or less visit. Tucson, and surrounding areas, have dedicated exercise spaces, such as senior centers and parks, which if utilized properly, can contribute to the older adult population meeting weekly activity goals.

Abundant Health Family Practice is the setting for this project. Most 50 and older patients at the clinic are seen yearly for wellness exams as well as for episodic medication follow-up and comorbidity management. Abundant Health Family Practice is located on the Northwest side of Tucson and provides services for residents of rural areas and to the underserved populations, including those who live in Marana, AZ. The clinic provider to patient ratio is 2,700:1.

Once permission was obtained from facility administration, Abundant Health Family Practice stakeholders such as the nurse practitioner, office manager, and medical assistants/front desk personnel - were notified via email about the purpose and AIMS of this DNP project. An email explained how the DNP project would impact patient care, staff workflow, and included the intervention materials participants received.

Buy-in from the employees in the office was gained by identifying their perceived stakeholder benefits, which included: 1) being a part of a project which is designed to lead to the intent of patients to increase their PA; and 2) providing the practice with beneficial educational intervention that can be used in the future. Both of these AIMS appealed to stakeholders by increasing their positive well-being outcomes. (Lyubomirsky & Layous, 2013). Patient buy-in included explaining the benefits of increasing PA and providing potential local resources.

## Participants

For optimal participation, convenience sampling was used to recruit participants. Convenience sampling was chosen for the ease of implementing an intervention in a setting where the project leader had access to participants. Preliminary participants were selected based on the following inclusion criteria: (a) older adults over the age of 50 years old; (b) no known cognitive impairments; (c) English as primary language and (d) scheduled for primary care appointment. Patients matching inclusion criteria were flagged by the nurse practitioner at the beginning of each day. The front desk staff was made aware who has met criteria and been flagged. The front desk staff gave the potential participants a disclaimer for the DNP project. Participants were assigned into one of the two groups, standard appointment group or PA education group using an alternating quasi-randomization allocation method. Those receiving the standard appointment without the PA education received a disclaimer discussing the survey (Appendix D) while those participants who received the standard appointment and the PA education received a disclaimer addressing both (Appendix E). When the individual agreed to participate, she or he was directed to the project leader who conducted the intervention and post surveys. At that time the project was discussed, participants were instructed to meet with the

project leader after their appointment for either the post-survey only or the PA educational intervention and the post-survey. All intervention and post-tests were administered in a dedicated exam room, in order to ensure privacy. All of the participants were instructed to meet with the project leader in the exam room after his or her primary care visit to fill out a post-survey or receive a PA educational intervention and post-survey. The goal was to recruit at least 10 participants each in the PA education group and the standard appointment group over a one-month time period.

## Intervention

The participants who were enrolled in the PA education group were given a five-minute or less PA educational intervention. Interventions were kept short due to the hope that the intervention can be implemented in standard wellness or follow up visits with a primary care practitioner. The first part of the intervention focused on the reasons older adults should include exercise in their weekly routines (Appendix F). The intervention included education on benefits of exercise, how to overcome common older adult exercise barriers, and the current CDC recommendations of 150 minutes of physical exercise. The next step was giving examples of easily implemented exercises. The last piece of the intervention was a resource listing national and local resources including helpful websites and exercise opportunities throughout the upcoming months. There was oral and written intervention material, including a handout on home exercises. The materials were delivered in English, at an 8th grade reading level, which is the level national healthcare agencies such as the CDC suggest (Badarudeen & Sabharwal, 2010). Written material including PA benefits and recommendations (Appendix F), PA national resources (Appendix G), PA local resources (Appendix H), PA example exercises (Appendix I),

were in large print. The PA education group received the educational PA intervention after their regularly scheduled standard appointment with their primary care provider. The participants in the standard appointment group only received their regularly scheduled standard appointment. Both groups completed a post survey prior to exiting the building.

## Data Collection

General data was collected from the demographic portion of the survey of participants form located in Appendix J. The demographic survey included gender, age range, education level, household income, relationship, and employment status. Data pertaining to participant PA and the HBM constructs was collected using a Likert 5 five-point scale. The Likert scale uses a quantitative measurement combined with qualitative measurement for all questions. The scoring goes from '1' *Strongly Disagree,* '2' *Disagree*, '3' *Neither*, '4' Agree, and '5' *Strongly Agree*. Questions regarding how important PA is to the individual, and intent to increase PA used the Likert scale. PA data collected included asking the participants how many minutes of exercise they receive each week. The HBM constructs included in the survey are perceived benefits compared to benefits, and self-efficacy.

Both groups completed their regularly scheduled standard appointment with their primary provider. The demographic survey and participant post surveys (Appendix J) were marked with an 'A' if it was given to a participant in the PA education group and marked with a 'B' if given to a participant in the standard appointment group. All information collected was placed in an excel file on a secured computer where the project leader was the only one with password protected access. When the computer is was not within arm's length of the project leader, the computer was in a locked room. All participant information was destroyed at the end of the

study. When the project has been completed and reviewed by the committee, clinicians and staff of the Abundant Health Family Practice will be notified of the findings through email and a face-to-face presentation so the educational tool can be utilized in practice.

## Data Analysis

Results of the surveys of the two groups were analyzed using statistical means for each question. The statistical means were compared between groups to determine the difference in the intervention group's exercise, intent to exercise, perceived barriers, and self-efficacy as compared to the non-intervention group. The demographic data was analyzed using descriptive statistics.

## Ethical Considerations

### Respect for Persons

Respect for persons in the research setting is the recognition that persons within a study, have their own set of values and are individuals. The principle of respect for persons states, the individuals in the study are to be treated as autonomous individuals. Participants with diminished autonomy are ensured the right of protection (The Belmont Report, 2014). In this DNP project the disclaimer process (Appendix D & E) disclosed all collected information, reasons for the project, risks, and benefits, and attempted to answer potential participant involvement questions so that participants were fully informed before agreeing to participate. Participants were informed that they could decline participation without retribution or change to their current healthcare management. Identifiable information was not categorized or kept so participants were not able to be identified through the project records. Every effort was made to provide age-related accommodations for the sake of autonomy and

respect of persons including handouts printed in large font, comfortable seating, quiet surroundings, and explicit language.

**Beneficence**

Beneficence is the ethical principle promoting good and charitable outcomes, above and beyond those imposed on duty (Pieper & Thomson, 2016). Applying beneficence in this DNP project meant identifying and calculating the risk and benefits to the subjects and beyond to the impact the work has on an individual and practice site level (Pieper & Thomson, 2016). There was minimal to no risk for participants and benefits included gaining knowledge regarding PA recommendations, its benefits, and how to apply PA knowledge to everyday practice. Undue stress was minimized through the positivity and helpful angle the education took, not focusing on guilt or fear mongering. The goal for the participants as well as the clinic population was to determine an intervention, which increased patients understanding of PA requirements, the benefits of achieving PA requirements, and the intent to start increasing PA.

**Justice**

The ethical principle of justice involves the patient's right to receive full privacy, and equality in equal distribution among persons (Matwick & Woodgate, 2017). The older adult has been targeted primarily due to the benefits PA can provide. Every effort was made to include all older adults, in the practice during the data collection period, for which PA education could benefit. All participants received similar educational interventions tailored to their needs. If a participant chose not to participate, he or she received their routine care. The

Abundant Health Family Practice may apply the educational intervention regularly, if they find the results of this project to prove a benefit to their older adult population.

## RESULTS

### Description of the Sample

The completed participant demographic surveys and participant post-surveys totaled 20 participants. Ten were started and completed for the standard appointment group, and 10 were completed for the PA education group. The response rate was 100%, and the completion rates were 100% for both groups. The participants were predominantly female (15) and evenly distributed between the two groups (Figure 1). Approximately 70% of the standard appointment group and 80% with PA education group were female participants. Ages in the standard appointment group were distributed as 40% of participants falling between the ages of 50 to 59 and 60% falling between the ages of 60 and 69. For the PA education group, 40% were between the ages of 50 to 59, 40% were in the set 60 to 69, 10% were in the set 70 to 79, and 10% were in the 80 to 89 year old set. The education level for the standard appointment group was 10% high school graduates, 50% some education beyond high school, but no degree and 40% were college graduates. For the PA education group, 20% were high school graduates, 20% had some education beyond high school with no degree, and 60% were college graduates. Household income was assessed with the standard appointment group being 10% having a household income of less than 24,999, 20% were $25,000 - $49,999, 30% were $60,000 - $99,999, 20% were over $100,000, and 20% declined to answer. Of the PA education group, 10% had a household income of $25,000 - $49,999, 60% $60,000 - $99,999, and 30% over $100,000. Most of the participants did have annual wellness appointments with their primary provider. A little

over half of both groups were working either part-time or full-time, and almost half of the participants declared retirement. The participant's current amount of time spent on exercising per week was evenly distributed in both groups (Figure 7). The Likert answer average point value was 2.8 for the standard appointment group, and 2.7 for the PA education group. Average weekly exercise time in both groups fell between the 30 to 59 minute category and the 60 to 99 minute category. Figures 1 to 7 show the sample demographics.

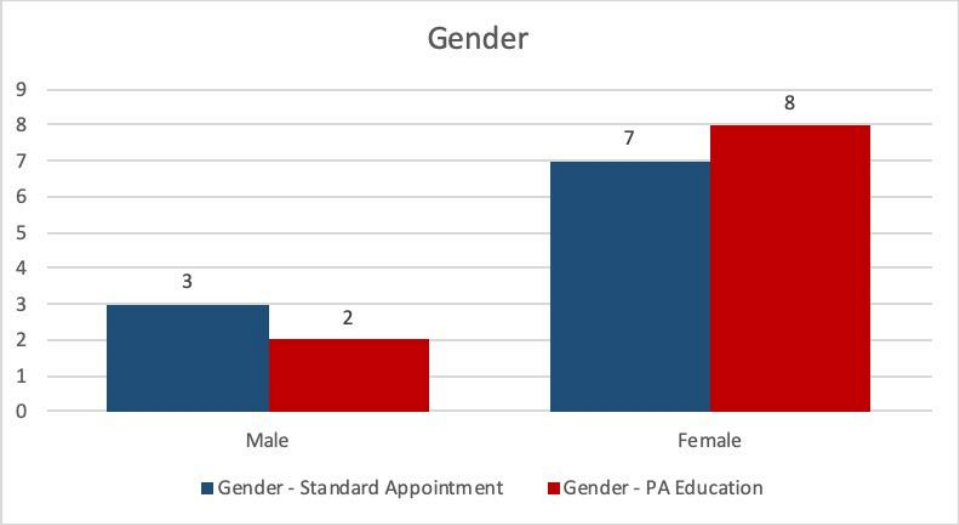



*FIGURE 1*. Gender.

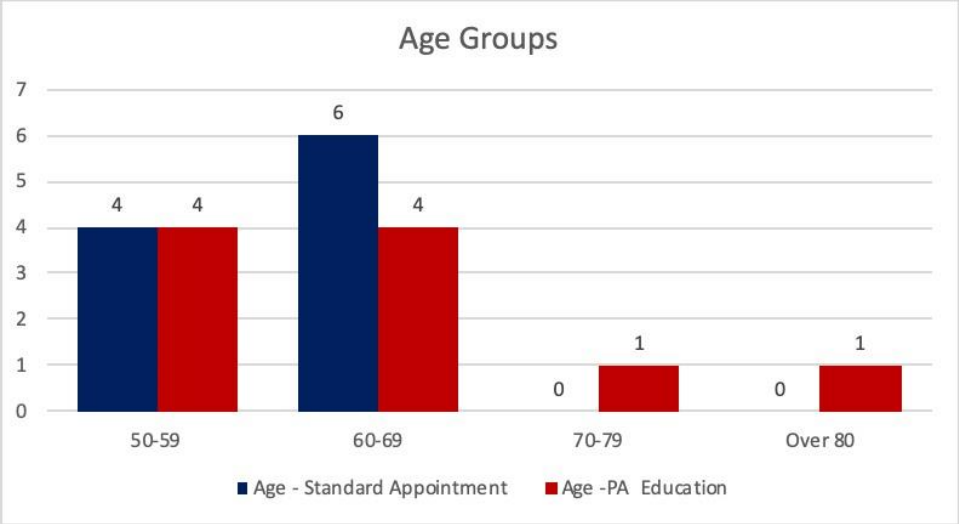



*FIGURE 2*. Age groups.

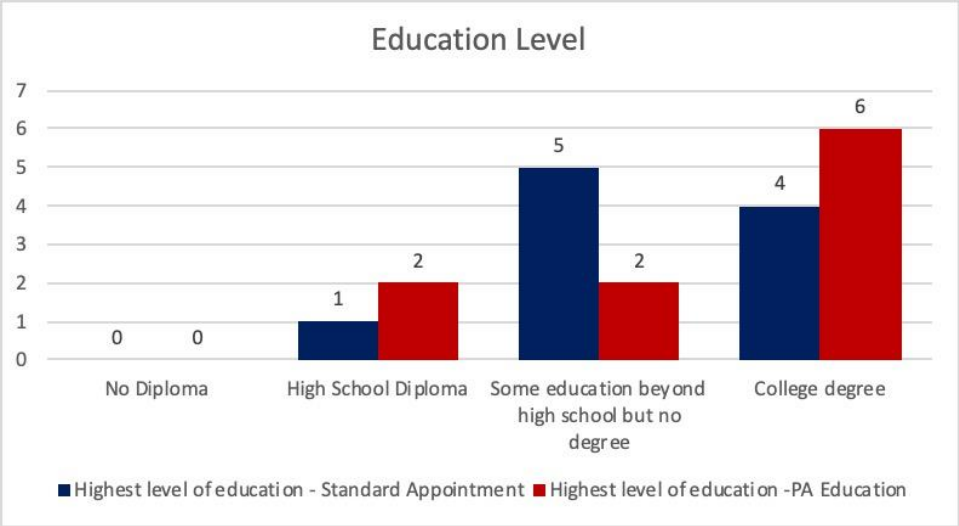



*FIGURE 3*. Education level.

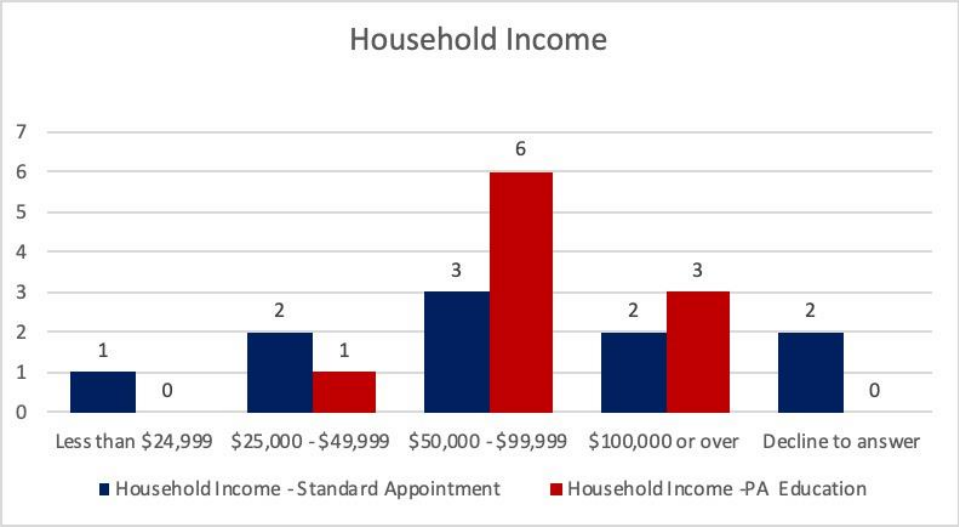



*FIGURE 4*. Household income.

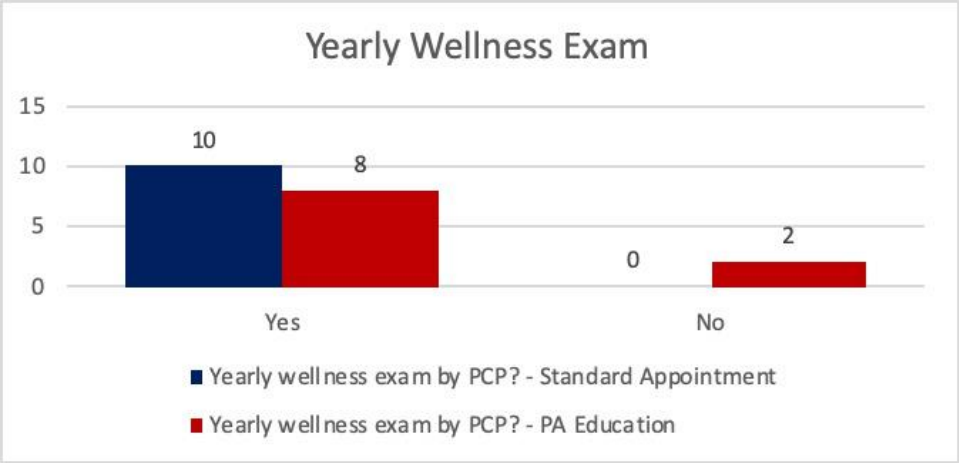



*FIGURE 5*. Yearly wellness exam.

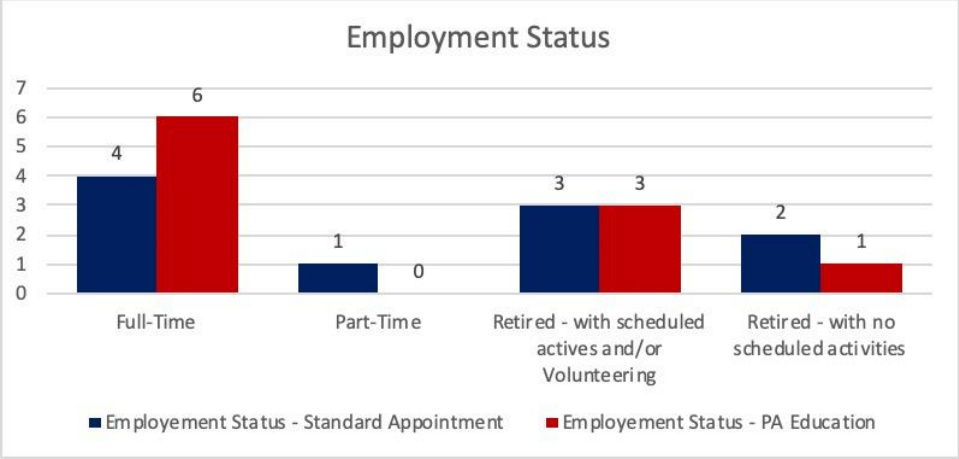



*FIGURE 6*. Employment status.

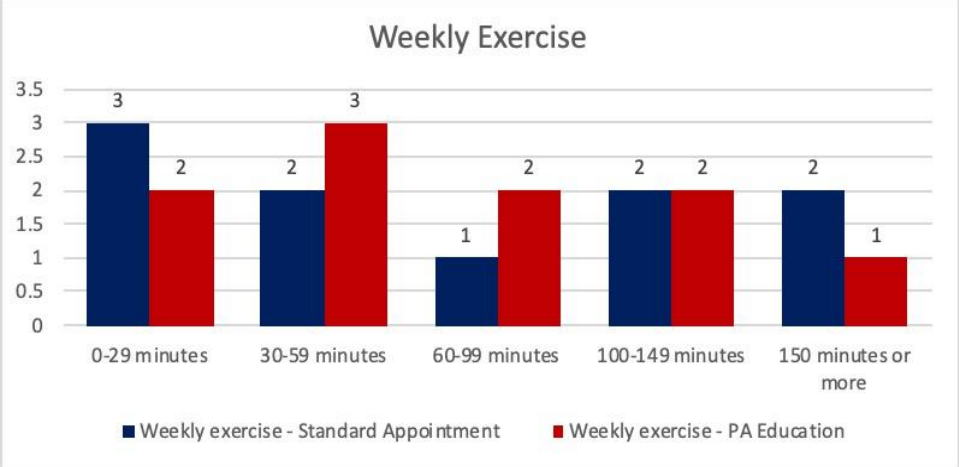



*FIGURE 7*. Weekly exercise.

## Findings Related to Project Question

The average reported belief that getting 150 minutes of getting MVPA a week is important for physical abilities was higher in the PA education group when compared to the standard appointment group. Using the Likert scale, the average score for the standard appointment group was 4.1, and the average score for the PA education group was 4.8. This indicates a 14% difference in the groups' answers. The average response in the standard appointment group more closely coincided with an 'Agree' response, and in the PA education group, the answer more closely correlated with a 'Strongly Agree' response. The two groups also responded differently to the question if they plan to start increasing their daily amount of activity. The standard appointment group had an average Likert score of 3.3, which correlates to a 'Neutral' response to the question asked. In the PA education group, the average Likert answer was 4.3 correlating to a positive answer of 'Agreed.' Participants who were in the PA education group had a 20% more positive response to intending to increase exercise. The results from both groups' questions are presented below in Figure 8 and 9.

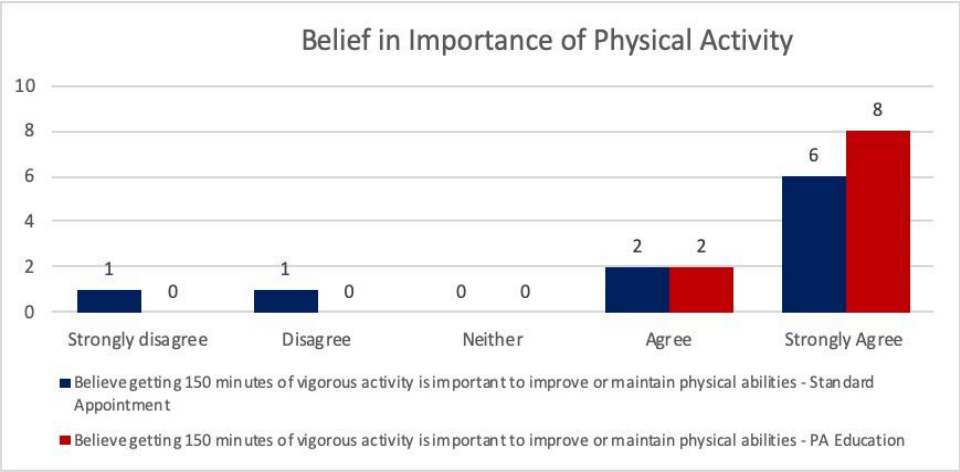



*FIGURE 8*. Belief in importance of physical activity.

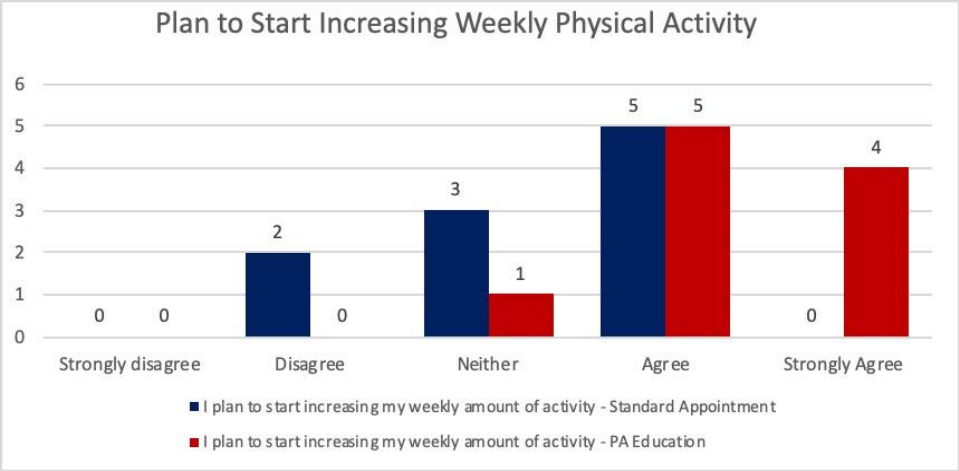



*FIGURE 9.* Plan to start increasing weekly physical activity.

## Findings Related to the Health Belief Model

The HBM question for benefits and barriers included both groups answering the question if they felt there were more barriers than benefits in getting 150 minutes of moderate to vigorous-intensity exercise in one week. The standard appointment group responded with an average Likert answer of 2.4 correlating to a collective answer between 'Neutral' and 'Disagree.' The PA education group had an average Likert answer of 1.7, placing the average answer between 'Disagree' and 'Strongly Disagree.' This was a difference in the two groups average answers elucidating fewer barriers were perceived after the education was given by 20%. Self-efficacy was measured by the question asking if the participant thought it was manageable to get 150 minutes of moderate to vigorous activity in one week. The standard appointment group responded with an average Likert answer of 4.2, and the PA education group responded with an average Likert score of 4.4. Both groups' answers correlated to the answer 'Agree' with only a 4% difference in the two groups average answers in agreeability in the PA education group. The results of the HBM questions and answers are represented below in Figure 10 and 11.

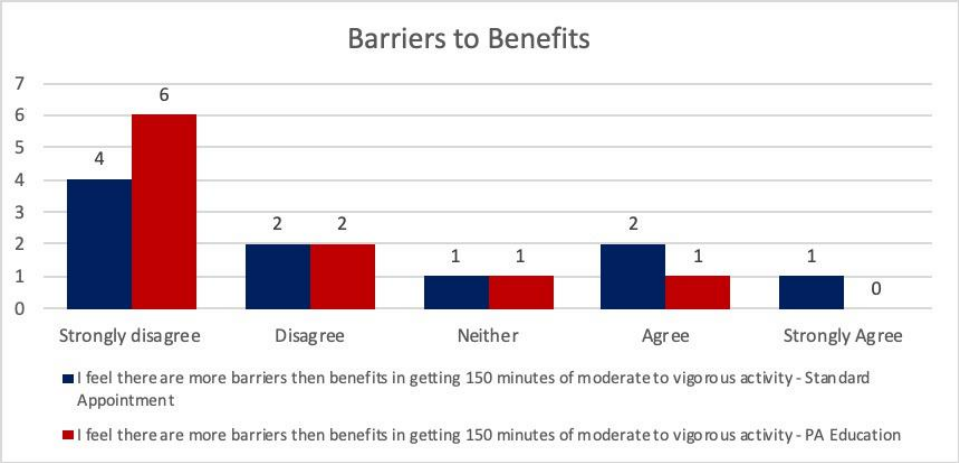



FIGURE 10. Barriers to benefits.

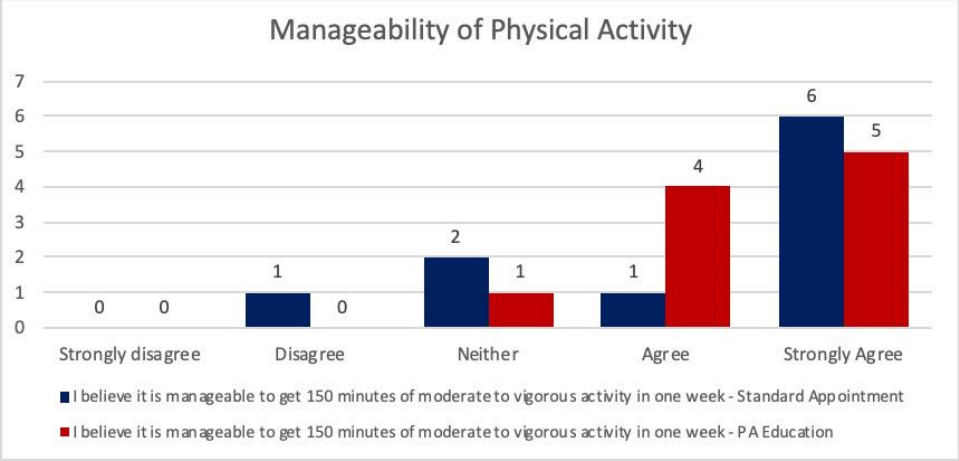



FIGURE 11. Manageability of physical activity.

## DISCUSSION

### Summary

In summation, the objective of the DNP project was met because there was a higher intent to increase weekly physical activity for PA education group compared to the standard appointment group. The difference in the mean answers between the standard appointment group and the PA education groups was 20%. Giving a provider-led educational intervention was an effective way to increase the intent to increase PA in the 50 and older population at the Abundant

Health Family Practice. The educational tool included PA recommendations, personal health benefits, identifying and how to overcome barriers, national and local resources, and visual descriptions of exercises. A 14% positive mean answer difference was found when comparing the two groups' beliefs on the importance of physical activity. Furthermore, the barrier to benefit ratio between the two groups had a 20% average difference in answers, signifying, the PA education group noted less barrier to exercise than the standard appointment group. Self-efficacy measurements were similar, with the mean group difference found to be at 4%. The PA education group had a higher household income average as well as more college degree holders. The influence of a higher income bracket could increase the participants accessibility to exercise equipment and support and more education could indicate a higher baseline knowledge of physical activity. This difference in the two groups' measure of self-efficacy could have been impacted by household income and/or educational level.

## Results in Context

### Relationship of Results to Framework

The HBM was an effective framework for forming an educational intervention on increasing the intent to exercise in the 50 and older population. By using a proven change model that identifies the constructs of how people make health-related behavior changes, the educational tool can be created to tailor interventions and questions to result in a more significant difference in the two groups average answers and to be able to assess the level of effectiveness more accurately. Acknowledging there are significant barriers to regular exercise creates a platform for the provider to be able to identify and work through the barriers so the patient may perceive the benefits being more significant than barriers. Self-efficacy was not shown to differ

between the two groups, and because the HBM was utilized and questions were based on constructs, this allows for the systematic reconstruction of the educational tool and to be able to accurately identify where improvements can be made.

**Relationship of Results to Evidence**

There was no identified available literature found to demonstrate that a brief educational handout, in the primary care setting, improved the intent to exercise or improved the exercise pattern in the older adult population. There have been studies proving a statistically significant effect of primary care led educational interventions being effective in creating positive change in PA in other populations such as the underserved (Carroll et al., 2008) in patients with arthritis (Nunez, Keller, & Anania 2009). The use of the HBM based educational material has been studied and found to have statistical significance in changing PA behaviors (Bethancourt, Rosenberg, Beatty, & Arterburn, 2014; Notthoff, Reisch, & Gerstorf 2017). Nunez, Keller, and Ananian, (2009) found by a systematic review, self-management education and activities were an effective way to stimulate healthy behaviors such as physical activity. The DNP project used a combination of provider led education, HBM educational format, and self-management education and tools to target a specific change in patient intent as a model for the DNP project. The project also incorporated language, reading level, font size, and age-appropriate PA examples appropriate for the older adult. The adaptations most likely improved the education's usefulness leading to an enhanced project effect. The overall results indicated there was an up to 20% difference in the average answers between the standard group and the physical education group. The results are consistent with other studies, which have concluded a practitioner lead educational tool is effective.

## Study Strengths

Overall, strengths include that the DNP project's results indicate effectiveness of promoting an increase of intent to exercise in the 50 and older population by using a provider led, HBM based educational tool as observed by the change in mean answers between the two groups. This project also has literature to support its constructs and was evaluated using the Likert scale so patient's responses could be used to guide the development of the educational tool further. The educational tool can be implemented within a standard episodic visit or a wellness visit in the primary care setting because it's ready to be utilized, easy to understand, and can be given in under five minutes. Printed resources and examples of pictures of specific exercises also gives the patient a means to implement exercise in their daily life regardless of physical ability, internet access, transportation availability, time, or financial resources. This DNP project is inexpensive and only necessitates few resources such as ink, paper, and a few minutes of the provider's time, making it an easy intervention to implement in other clinics and patient-centered facilities where health promotion is an area of focus.

## Study Limitations

One study limitation was the lack of participants in the 70 and older age range, who are at most risk for physical decline. Using convenience sampling over an eight-day period limited the reliability of this project to assess the effectiveness of the over 70-year-old population. Time was cut short due to limited time availability between the clinic schedule and project deadlines. Spending more days at Abundant Health Family Practice to collect data may have given the project more opportunity to collect a broader sample. There was a small difference in response answers to the HBM self-efficacy assessment question. Since there was no difference in self-

efficacy seen between the groups, more attention should be addressed to the research of self-efficacy and how to get participants to believe they can increase their PA to the 150-minute weekly goal and apply the findings in the educational tool. The DNP project was based on participants self-reporting on topics such as their current PA and their reported intent to exercise. Research shows that people tend to overestimate how much exercise they do during a week (Kapteyn, Banks, & Hamer, 2018). Face-to-face education between the patient and the project leader could have skewed patients' responses due to participants wanting to gratify the project leader by agreeing they have more intent to increase exercise.

## Future Implications

The office staff and the primary provider at the Abundant Heath Family practice will receive an in-person debriefing at the end of November, regarding this DNP project, headed by the project leader. The educational tool will be distributed, and the digital copy will be emailed to the office staff and the primary provider for their usage. It is the opinion of the project leader that this DNP project could be implemented in clinics similar to the Abundant Health Family Practice with as much effect and can be easily tailored to new populations by changing local resources. Providing printed education and handheld exercise resources at an appointment is a low-cost and effective way to cover preventative and therapeutic health education to patients looking for health guidance. Keeping a stock of pre-printed packets is essential to essential to ensuring the implementation of the educational tool. Office staff should be coached to print new educational handouts if stock is low and store the handouts in a place where the provider has easy access during a patient appointment. Self-efficacy could be improved by having the patients reflect on a time when they were successful with a PA regimen combined with motivational

interviewing techniques. Going forward, the provider who is handing out and educating patients could ask the patients if they thought the information was helpful in their everyday life on a follow-up appointment so the provider can make clinic specific adjustments to fit the needs of the patient. The project could be redesigned to add more resources and exercises that appeal to the specific population and further education could be implemented in follow up appointments. Following patients over time to see if provider PA education lead to patients actually increasing their weekly PA would be of value. Applications to consider in order to track whether patients are increasing weekly physical activity is implementing a quantitative measure impact such as a wearable wrist activity tracker. Ultimately, it is vital to incorporate some amount of exercise education in a primary care visit, so the patient starts increases his or her intent to implement exercise in their daily lives and is able to maintain/improve physical function and overall well-being for as long as possible.

## Conclusion

This project supports the concept that when primary providers include a brief PA education handout with resources, the 50 and older population has an intent to increase weekly physical activity. The results also indicate when giving well-rounded education, including personal health benefits, current national recommendations, ways to overcome common PA barriers, national and local resources, and examples of exercises, patients are receptive and positively impacted. Future studies could include a larger sample size, which includes more of a representation of the 70 years of age and older groups, and include more literature on promoting self-efficacy. Future studies could also include follow up appointments to reinforce the education

and measure the impact of a brief educational tool has on older adults and their intent to increase exercise.

# APPENDIX A:

# LITERATURE REVIEW TABLE

| Author / Article | Qual: Concepts or Phenomena Quan: Key Variables/Hypothesis/ Research Question | Theoretical Framework | Design | Sample (n) | Data Collection (Instruments/Tools) | Findings |
|---|---|---|---|---|---|---|
| Beighton, C., Victor, C., Normansell, R., Cook, D., Kerry, S., Iliffe, S., ... Harris, T. (2015). "It's not just about walking ... it's the practice nurse that makes it work": A qualitative exploration of the views of practice nurses delivering complex physical activity interventions in primary care. *BMC Public Health, 15*(1), 1236. doi:10.1186/s12889-015-2568-6 | Concepts: Nurse time commitment, outcome assessment, nurse consultations | Behavior Change Techniques | Qualitative | N=11 | Semi structured interviews were conducted by independent facilitators; audio recorded, transcribed verbatim, and analyzed using thematic analysis. | Nurses believed taking part in the trial enhanced the quality and delivery of device and support they provided within the consultations. |
| Bethancourt, H. J., Rosenberg, D. E., Beatty, T., & Arterburn, D. E. (2014). Barriers to and facilitators of physical activity program use among older adults. *Clinical Medicine & Research*, *12*(1-2), 10–20. doi:10.3121/cmr.2013.1171 | To better understand the barriers to and facilitators of PA and participation in PA programs among older adults. | Social-ecological framework. | Qualitative study using focus group interviews | N= 52 | Audio-recorded, transcribed, and analyzed using an inductive thematic approach | Prominent barriers to PA and PA program participation were physical limitations due to health conditions or aging, lack of professional guidance, and inadequate distribution of information on available and appropriate PA options and programs. |
| Carroll, J., Fiscella, K., Meldrum, S. C., Williams, G. C., Sciamanna, C. N., Jean-Pierre, P., ... Epstein, R. M. (2008). Clinician-patient communication about physical activity in an underserved population. *J Am Board Fam Med, 21*(2), 118-127. doi:10.3122/jabfm.2008.02.070117 | Assess primary care physicians' use of the 5As in discussions about physical activity with underserved populations | 5 A Model | Randomized Control Trials | N=51 patients | Analyzed 51 audio recorded, transcribed office visits on randomly selected patient care days and post-visit patient surveys with adults in two community health centers | Physicians who used the 5 A model were successful in changing patients' patterns. |

| Author / Article | Qual: Concepts or Phenomena<br>Quan: Key Variables/Hypothesis / Research Question | Theoretical Framework | Design | Sample (n) | Data Collection (Instruments/Tools) | Findings |
|---|---|---|---|---|---|---|
| Ferguson, S., Swan, M., & Smaldone, A. (2015). Does diabetes self-management education in conjunction with primary care improve glycemic control in Hispanic patients?:A systematic review and meta-analysis. *The Diabetes Educator, 41*(4), 472-484. doi:10.1177/0145721715584404 | Research purpose: Evaluate the effectiveness of diabetes self-management interventions delivered by primary care | N/A | Systematic review and Meta-analysis | Systematic review included 13 articles and the Meta-analysis included 11 articles. | MeSH words, inclusion, exclusion criteria, and appropriate date ranges were used to narrow down the eligible articles. A quality appraisal based on the article's 7 quality appraisal elements and bias prevention by having two independent appraisers included. | Primary care intervention led to improvements in glycemic control but further research is needed to determine best methods of education/intervention. |
| Gamboa Moreno, E., Mateo-Abad, M., Ochoa de Retana García, L., Vrotsou, K., del Campo Pena, E., Sánchez Perez, Á., ... Rotaeche del Campo, R. (2019). Efficacy of a self-management education program on patients with type 2 diabetes in primary care: A randomized controlled trial. *Prim Care Diabetes, 13*(2), 122-133. doi:https://doi.org/10.1016/j.pcd.2018.10.001 | Key Variables: Self-management interventions, A1C<br>Hypothesis: Giving patients self-management strategies will improve A1C goals better than medication and baseline education<br>Research Question: Is self-management education and intervention more effective in lowering A1C versus usual care in type 2 diabetes | N/A | Randomized Controlled Trial | Sample: The n = 594 adults over 18 Y.O. with type 2 diabetes were recruited and were randomized to the intervention (n = 297) and the control arm (n = 297). In total n = 62 participants were lost to follow up<br>Setting: Outpatient Spanish region | Data Collection: Self-efficiency was evaluated with the Spanish Diabetes Self-Efficacy Scale, assessing self-efficacy in relation to diet, physical activity and disease control. Physical activity levels were measured by the 7-day Physical Activity Recall (PAR) interview. Dietary habits were evaluated with the food frequency questionnaire of the PREDIMED study. Patient satisfaction with the program was assessed anonymously by 23 ad hoc questions, replied on a 1: strongly disagree to 5: totally agree, scale. | Self-efficiency in disease control can be obtained with primary care intervention but long-term success was not significant. |

| Author / Article | Qual: Concepts or Phenomena<br>Quan: Key Variables/Hypothesis/ Research Question | Theoretical Framework | Design | Sample (n) | Data Collection (Instruments/Tools) | Findings |
|---|---|---|---|---|---|---|
| Goodyear-Smith, F., McPhee, J., Duncan, S., & Schofield, G. (2014). Evaluation of a primary care-based programme designed to increase exercise and improve nutrition in patients at risk. *J Prim Health Care, 6*(4), 312-318. | Concepts: To gather evidence regarding the effectiveness of brief interventions promoting physical activity and dietary change in the out patient setting. | Grounded Theory | Qualitative Randomized Controlled Trial | Sample: n=154 out patient adults aged 35–65 years with a five-year CVD risk of at least 7%, and/or a body mass index (BMI) of at least 33 $kg/m^2$ for participants younger than 50 years.<br><br>Setting: Out patient New Zealand | A thematic analysis approach based on grounded theory was used to analyze the emerging key themes from the semi-structured interviews. Data were collated into table form and themes were independently coded by two researchers, with adjudication until consensus was reached. | Good communication between the patient and health provider is required to facilitate shared decision-making and self-management prior to implementation of an intervention |
| Notthoff, N., Reisch, P., & Gerstorf, D. (2017). Individual characteristics and physical activity in older adults: A systematic review. *Gerontology, 63*(5), 443-459. doi:10.1159/000475558 | Key variables: Gender, education, marital status, employment, subjective health, health problems, motivation, self-efficiency, and locus of control. Research goal: Identify individual characteristics that are consistently linked to higher PA levels in older adults | PRISMA guidelines | Systemic Review | N=63 full-text articles | Review of articles which were manually read through and selected variables were identified | Motivation and self-efficacy - and the perception of one's health are regularly associated to higher PA levels in older adults. Particular demographic variables - gender and education - may be significant for some types of PA. |

| Author / Article | Qual: Concepts or Phenomena<br>Quan: Key Variables/Hypothesis/ Research Question | Theoretical Framework | Design | Sample (n) | Data Collection (Instruments/Tools) | Findings |
|---|---|---|---|---|---|---|
| Nunez, D. E., Keller, C., & Ananian, C. D. (2009). A review of the efficacy of the self-management model on health outcomes in community-residing older adults with arthritis. *Worldviews Evid Based Nurs, 6*(3), 130-148. doi:10.1111/j.1741-6787.2009.00157.x | Research Purpose: To evaluate the effectiveness of the self-management program in adults with arthritis on the outcome of disability | N/A | Systematic Review | 16 studies were included | Three databases were searched including MEDLINE, CINAHL, and the Cochrane Library from 1985 to 2008. Appropriate search terms, inclusion criteria, and exclusion criteria used. Of the 517 initially identified, 2 Cochrane reviews, 4 meta-analyses/systematic reviews, 8 RCTs, one experimental, and 1 longitudinal study were included in this review Only Level I or II evidence articles included. | Self-management education and activities are an effective way to stimulate health promotional behaviors such as physical activity for the prevention of disability. |
| Pedersen, E. R., Rubenstein, L., Kandrack, R., Danz, M., Belsher, B., Motala, A., ... Hempel, S. (2018). Elusive search for effective provider interventions: A systematic review of provider interventions to increase adherence to evidence-based treatment for depression. *Implement Sci, 13*(1), 99. doi:10.1186/s13012-018-0788-8 | Concepts; To gather information on the effect of provider interventions and the impact on patient's depression outcomes | None | Systematic Review | 22 RCTs | Meta-analysis to summarize odds ratios, standardized mean differences, and incidence rate ratios, and assessed quality of evidence (QoE) using the GRADE approach | More complex Provider interventions improved individual outcomes. Effects on patients'' health in the RTCs were inconsistent as well as the type of interventions which showed effect. |

| Author / Article | Qual: Concepts or Phenomena<br>Quan: Key Variables/Hypothesis/ Research Question | Theoretical Framework | Design | Sample (n) | Data Collection (Instruments/Tools) | Findings |
|---|---|---|---|---|---|---|
| Shao, C., Wang, J., Liu, J., Tian, F., & Li, H. (2018). Effect of a Health Belief Model-based education program on patients' belief, physical activity, and serum uric acid: A randomized controlled trial. *Patient Prefer Adherence, 12*, 1239-1245. doi:10.2147/ppa.s166523 | Physical activity, blood pressure, perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and self-efficiency | Health Belief Model | Randomized Control Trial | N=193 AHU patients Setting= Shanghai, China | Descriptive statistics. Independent 2-samples *t*-test, paired 2-samples *t*-test, and $\chi^2$ analysis were used to examine bivariate relationships between sociodemographic variables, 5 major constructs of HBM, physical activity, and SUA for continuous and categorical variables, respectively | This study proved the significance of the educational program based on the HBM in improving the model constructs and physical activity, as well as in diminishing the SUA standards in AHU patients |
| Wallhagen, M. I., & Strawbridge, W. J. (2017). Hearing loss education for older adults in primary care clinics: Benefits of a concise educational brochure. *Geriatr Nurs, 38*(6), 527-530. doi:10.1016/j.gerinurse.2017.03.015 | Concepts: Physician referrals, subsequent patient actions, alternative changes, gender and age referral differences, participant feedback on the brochure | None | Randomized control Trial | N=67 Mean age= 72.8 67% = Female 37%= Male 79% = Have at least some college | Analyzed age differences for referrals and making changes with logistic regression models adjusting for gender. | A very brief hearing educational brochure accompanied by a brief review can stimulate the subsequent use of positive communication. |

# APPENDIX B:

# THE UNIVERSITY OF ARIZONA INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

THE UNIVERSITY OF ARIZONA
Research, Discovery & Innovation

Human Subjects Protection Program

1618 E. Helen St.
P.O.Box 245137
Tucson, AZ 85724-5137
Tel: (520) 626-6721
http://rgw.arizona.edu/compliance/home

| | |
|---|---|
| **Date:** | September 24, 2019 |
| **Principal Investigator:** | Victoria Catherine Weirick |
| **Protocol Number:** | 1909984760 |
| **Protocol Title:** | Increasing Physical Activity Intent in the 50 and Older Population |
| **Determination:** | Human Subjects Review not Required |

**Documents Reviewed Concurrently:**

**HSPP Forms/Correspondence:** *determination of human subjects .pdf*

**Regulatory Determinations/Comments:**

- Not Research as defined by 45 CFR 46.102(l): As presented, the activities described above do not meet the definition of research cited in the regulations issued by U.S. Department of Health and Human Services which state that "Research means a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge. Activities that meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program that is considered research for other purposes. For example, some demonstration and service programs may include research activities. For purposes of this part, the following activities are deemed not to be research."

The project listed above does not require oversight by the University of Arizona.

If the nature of the project changes, submit a new determination form to the Human Subjects Protection Program (HSPP) for reassessment. Changes include addition of research with children, specimen collection, participant observation, prospective collection of data when the study was previously retrospective in nature, and broadening the scope or nature of the study activity. Please contact the HSPP to consult on whether the proposed changes need further review.

The University of Arizona maintains a Federalwide Assurance with the Office for Human Research Protections (FWA #00004218).

# APPENDIX C:

# SITE AUTHORIZATION FORM

July 2019

University of Arizona Institutional Review Board
c/o Office of Human Subjects
1618 E. Helen St
Tucson, AZ 85721

Victoria Weirick, University of Arizona DNP student, is permitted by Abundant Health Family Practice to implement a quality improvement project at my clinic for the project entitled, 'Increasing Physical Activity Intent in the 50 And Older Population', after receiving approval form the University of Arizona's IRB.

Victoria Weirick intends to implement a physical activity educational intervention for the clinic patients over the age of 50. She will recruit patients based on their age and already having a standard appointment scheduled. Participants will receive a disclaimer before agreeing to partake in the project, including information about what involvement will require from the participant and the participant's rights regarding the project.

Victoria Weirick will present the results of her intervention personally to the clinic providers once the project is complete.

Signed,

7/17/2019

Dr. Cindy Elliott, DNP, FNPC

Abundant Health Family Practice
6130 N. La Cholla Blvd. Suite 240
Tucson AZ, 85741
Phone: (520) 326-1457

# APPENDIX D:

# PARTICIPANT DISCLAIMER FORM:

# STANDARD APPOINTMENT WITH INTERVENTION

**Disclaimer and information form for PA Education group participants**

**Study Title:**

Increasing Physical Activity Intent in the 50 and Older Population

**Purpose**:

The purpose of this project is to determine if brief education on current recommendations for, benefits of, and local resources for physical activity will change adults over the age of 50 intent to increase physical activity.

**Procedure**:

During the project you will be asked basic background information, to participate in a conversation about physical activity, and to take a post survey about your intent to exercise. The survey will take less than five minutes and the intervention will take a max of five minutes to complete. This entire process will take place in the office today.

**Risk:**

There is no risk involved with participation. The care you receive will not change if you do not participate. You may skip any survey questions you do not want to answer. You may drop out of the project at any time.

**Confidentiality**:

All collected information will be kept private, following HIPPA laws, and will be destroyed once the project has been completed. There will be no personal identifying information collected

**Questions:**

If you have any questions about the research now or during the study, please contact: Victoria Weirick, RN, Project leader at Vweirick@email.arizona.edu

By completing the education intervention with the project leader and the survey, you are consenting to participation in this project.

# APPENDIX E:

# PARTICIPANT DISCLAIMER FORM:

# STANDARD APPOINTMENT WITHOUT INTERVENTION

**Disclaimer and information form for Standard Appointment participants**

**Study Title:**

Increasing Physical Activity Intent in the 50 and Older Population

**Purpose**:

The purpose of this project is to determine if brief education on current recommendations for, benefits of, and local resources for physical activity will change adults over the age of 50 intent to increase physical activity.

**Procedure**:

During the project you will be asked basic background information, go to you scheduled standard office visit, and take a post survey about your intent to exercise. The survey will take less than five minutes. All information will be collected in office today.

**Risk:**

There is no risk involved with participation. The care you receive will not change if you do not participate. You may skip any survey questions you do not want to answer. You may drop out of the project at any time.

**Confidentiality**:

All collected information will be kept private, following HIPPA laws, and will be destroyed once the project has been completed. There will be no personal identifying information collected

**Questions:**

If you have any questions about the research now or during the study, please contact: Victoria Weirick, RN, Project leader at Vweirick@email.arizona.edu

By completing the survey, you are consenting to participation in this project.

# APPENDIX F:

# HANDOUT OF PHYSICAL ACTIVITY BENEFITS AND RECOMMENDATIONS


Office of Disease Prevention and Health Promotion

## Table 2-1. Health Benefits Associated With Regular Physical Activity

### Adults and Older Adults

- Lower risk of all-cause mortality
- Lower risk of cardiovascular disease mortality
- Lower risk of cardiovascular disease (including heart disease and stroke)
- Lower risk of hypertension
- Lower risk of type 2 diabetes
- Lower risk of adverse blood lipid profile
- Lower risk of cancers of the bladder, breast, colon, endometrium, esophagus, kidney, lung, and stomach
- Improved cognition*
- Reduced risk of dementia (including Alzheimer's disease)
- Improved quality of life
- Reduced anxiety
- Reduced risk of depression
- Improved sleep
- Slowed or reduced weight gain
- Weight loss, particularly when combined with reduced calorie intake
- Prevention of weight regain following initial weight loss
- Improved bone health
- Improved physical function
- Lower risk of falls (older adults)
- Lower risk of fall-related injuries (older adults)


## Key Guidelines for Older Adults

**These guidelines are the same for adults and older adults:**

- ✓ Adults should move more and sit less throughout the day. Some physical activity is better than none. Adults who sit less and do any amount of moderate-to-vigorous physical activity gain some health benefits.
- ✓ For substantial health benefits, adults should do at least 150 minutes (2 hours and 30 minutes) to 300 minutes (5 hours) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) to 150 minutes (2 hours and 30 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity. Preferably, aerobic activity should be spread throughout the week.
- ✓ Additional health benefits are gained by engaging in physical activity beyond the equivalent of 300 minutes (5 hours) of moderate-intensity physical activity a week.
- ✓ Adults should also do muscle-strengthening activities of moderate or greater intensity and that involve all major muscle groups on 2 or more days a week, as these activities provide additional health benefits.

**Guidelines just for older adults:**

- ✓ As part of their weekly physical activity, older adults should do multicomponent physical activity that includes balance training as well as aerobic and muscle-strengthening activities.
- ✓ Older adults should determine their level of effort for physical activity relative to their level of fitness.
- ✓ Older adults with chronic conditions should understand whether and how their conditions affect their ability to do regular physical activity safely.
- ✓ When older adults cannot do 150 minutes of moderate-intensity aerobic activity a week because of chronic conditions, they should be as physically active as their abilities and conditions allow.

# APPENDIX G:

# PHYSICAL ACTIVITY NATIONAL RESOURCES

National Resources

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

cdc.gov/arthritis/basics/physical-activity-overview.html

This DPH website provides resources and guidance on physical activity for individuals with arthritis.

Go4Life®
from the National Institute on Aging at NIH

go4life.nia.nih.gov/

*Go4Life* is an exercise and physical activity campaign designed to help older Americans fit exercise and physical activity into daily life. *Go4Life* offers exercises, motivational tips, and free resources to help older Americans get ready, start exercising, and keep going. The *Go4Life* campaign includes an evidence-based exercise guide in both English and Spanish, an exercise video, an interactive website, and a national outreach campaign.

# APPENDIX H:

# PHYSICAL ACTIVITY LOCAL RESOURCES

**Tucson Resources**

Senior exercise programs:

City of Tucson senior programs list
Tucson Parks and Recreation offers a variety of programs and services for active adults. There are three dedicated senior centers in addition to Senior Programs available at other locations. The Senior Programs provides Tucson's adults (50+) with age-appropriate social, recreational, educational, and physical activities.

520-791-4873
tucsonaz.gov/parks/senior-programs

Pima Council on Aging
EnhanceFitness- One-hour sessions held three times per week focused on increasing your strength, endurance, balance, and flexibility. Level 1 classes are done seated; Level 2 classes are standing. Fitness Check assessments are conducted for each new participant attending the EnhanceFitness Program and again after 4 months, then again at 12 months, to measure individual progress.

(520) 305-3410
pcoa.org/ways-we-help/healthy-living-classes

TMC
Balance workshop- Preventing falls becomes essential as people age. Just one fall can mean the end of independence and making sure you are balanced can make all the difference. Join expert Marilyn Woods for 4 weeks of tips and practice to help you reduce the risk of falling. Workshop series limited to 10 participants, to allow individualized attention and costs $30/per person.

520-324-1960
Tmcaz.com/events

YMCA of Southern Arizona
The YMCA makes health and fitness of seniors a top priority by providing programs for the spirit, mind, and body. They offer a variety of fitness programs specifically designed for the older adults who seek cardiovascular, muscular strength and flexibility exercise.

520-623-5511 X247 Annemarie Medina
tucsonymca.org/program/senior-adult-exercise/

Transportation

Programs can be fee-based, discounted or free depending on your age, income or if you are disabled. Transportation can be provided by the government entities such as local city transit authorities, for-profit and non-profit organizations providing small regional bus or van services, or by volunteers serving the community through non-profit organizations.

Call 211 for more information on local transportation resources
Seniorsresourceguide.com/directories/Tucson

# APPENDIX I:

# PHYSICAL AND EXAMPLE EXERCISES

Go4Life®
from the National Institute on Aging at NIH

## Overcoming Barriers to Exercise: No More Excuses

Exercise is good for almost everyone, but there are so many things that can get in the way of staying active. It's time for some positive thinking. No more excuses!

### Finding Time to Exercise

Try exercising first thing in the morning. Combine physical activity with a task that's already part of your day, such as walking the dog or doing household chores. If you don't have 30 minutes to be active, look for three 10-minute periods. As you progress, add more 10-minute sessions until you hit your goal!

### Sticking with Your Exercise Plan

Make exercise interesting and enjoyable. Do things you enjoy, but pick up the pace and try new activities to keep your interest alive. Being creative about your physical activity plans and regularly trying new forms of exercise prevent boredom. If you can stick with it for at least 6 months, it's a good sign that you're on your way to making physical activity a regular habit.

### Exercising without Spending Money

Being active doesn't have to cost a thing! All you need for brisk walking is a pair of comfortable, non-skid shoes. For strength training, you can save money by making your own weights using soup cans or water bottles. Check with your local parks and recreation department or senior center about free or low-cost exercise programs in your area.

### Increasing Your Energy

Regular, moderate physical activity can help reduce fatigue and even help you manage stress. Exercise can also reduce feelings of depression, while improving your mood and overall emotional well-being. Once you become active, you're likely to have more energy than before. As you do more, you also may notice that you can do things more easily, faster, and for longer than before.

# Strength

Try to do strength exercises for all of your major muscle groups on 2 or more days per week for 30-minute sessions each, but don't exercise the same muscle group on any 2 days in a row.

## Upper Body

Seated Row with Resistance Band Exercise

Chair Dip Exercise

Arm Curl with Resistance Band Exercise

Wall Push-Up Exercise

Arm Curl Exercise

Side Arm Raise Exercise

Front Arm Raise Exercise

Overhead Arm Raise Exercise

Wrist Curl Exercise

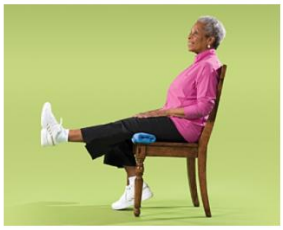
Hand Grip Exercise

Elbow Extension Exercise

## Lower Body

Toe Stand Exercise

Chair Stand Exercise



Leg Straightening Exercise

Knee Curl Exercise

Side Leg Raise Exercise

Back Leg Raise Exercise

## Endurance

## Walking or Rolling Exercise

Brisk walking is great exercise, and like other endurance exercises, it can increase your heart rate and breathing. Endurance exercises keep you healthy, improve your fitness, and help you do the tasks you need to do every day.

For some, walking for the recommended 30 minutes a day might be difficult. If so, try walking for 10 minutes at a time and build up to three times a day. As your endurance improves, walk longer until you can advance to a single 30-minute walk.

Step counters can help you keep track of your walking, set goals, and measure your progress.

Most inactive people get fewer than 5,000 steps a day, and some very inactive people get only 2,000 steps a day. Try wearing a step counter for a few days to see how you're doing.

If you get 10,000 or more steps a day, you can be confident that you're getting an adequate amount of endurance activity.

### Types of Endurance Exercises

1. Gardening
2. Heavy housework
3. **Go4Life** Exercise Videos
4. Raking
5. Shoveling snow
6. Biking
7. Horseback riding
8. Jogging
9. Skating
10. Going to a gym or fitness center and using the treadmill, elliptical machine, stationary bike, or rowing machine
11. Swimming/Water aerobics
12. Dancing
13. Martial arts
14. Racquet sports
15. Seated Volley ball

# Balance

You can do balance exercises almost anytime, anywhere, and as often as you like. Having good balance is important for many everyday activities, such as going up and down the stairs. It also helps you walk safely and avoid tripping and falling over objects in your way.

Heel-to-Toe Walk Exercise

Stand on One Foot Exercise

Tai Chi

Balance Walk Exercise

# Flexibility

Do each stretching exercise 3 to 5 times at each session. Slowly and smoothly stretch into the desired position, as far as possible without pain. Hold the stretch for 10 to 30 seconds. Relax, breathe, then repeat, trying to stretch farther.

Yoga and Older Adults

Buddy Stretch Exercise

Calf Stretch Exercise

Lower Back Exercise

Hip Flexibility Exercise

Thigh Flexibility Exercise (Standing)

Thigh Flexibility Exercise (Floor)

Back of Leg Exercise

Back of Leg Exercise (Floor)

Ankle Stretch Exercise


Upper Back Exercise

Back Exercise 2

# APPENDIX J:

# DEMOGRAPHIC SURVEY AND PARTICIPANT POST-SURVEY

# Demographic Survey and Participant Post-Survey

1. Please indicate your gender.
☐Male ☐Female ☐Other

2. Please indicate your age.
☐50-59
☐60-69
☐70-79
☐Over 80 years

3. What is the highest level of education you have completed?
☐No diploma
☐High school diploma or equivalent
☐Some education beyond high school but no degree
☐College degree

4. What is your annual household income?
☐Less than $24,999
☐$25,000-$49,999
☐$50,000-$99,999
☐$100,000 and over
☐Decline to answer

5. Do you get a yearly wellness exam by your primary care provider?
☐ Yes
☐ No

6. What best describes your employment status?
☐ Full-time
☐ Part-time
☐ Retired – With scheduled activities and or volunteering
☐ Retired – With NO scheduled activities and or volunteering

Please mark the appropriate response to the questions below.

| Questions | | | | | |
|---|---|---|---|---|---|
| **1.** How much exercise I get on a weekly basis falls into the category of: | ① **0-29 Minutes Weekly** | ② **30-59 Minutes Weekly** | ③ **60-99 Minutes Weekly** | ④ **100-149 Minutes Weekly** | ⑤ **150 or above Minutes Weekly** |
| **2.** I believe getting 150 minutes of moderate-to-vigorous physical activity a week is important to improve or maintain my physical abilities and overall health. | ① **Strongly Disagree** | ② **Disagree** | ③ **Neither** | ④ **Agree** | ⑤ **Strongly Agree** |
| **3.** I feel there are more <u>barriers</u> than there are <u>benefits</u> in getting 150 minutes of moderate-to-vigorous physical activity a week. | ① **Strongly Disagree** | ② **Disagree** | ③ **Neither** | ④ **Agree** | ⑤ **Strongly Agree** |
| **4.** I believe it is manageable to get 150 minutes of moderate-to-vigorous physical activity in one week. | ① **Strongly Disagree** | ② **Disagree** | ③ **Neither** | ④ **Agree** | ⑤ **Strongly Agree** |
| **5.** I plan to start increasing my weekly amount of moderate-to-vigorous physical activity. | ① **Strongly Disagree** | ② **Disagree** | ③ **Neither** | ④ **Agree** | ⑤ **Strongly Agree** |

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